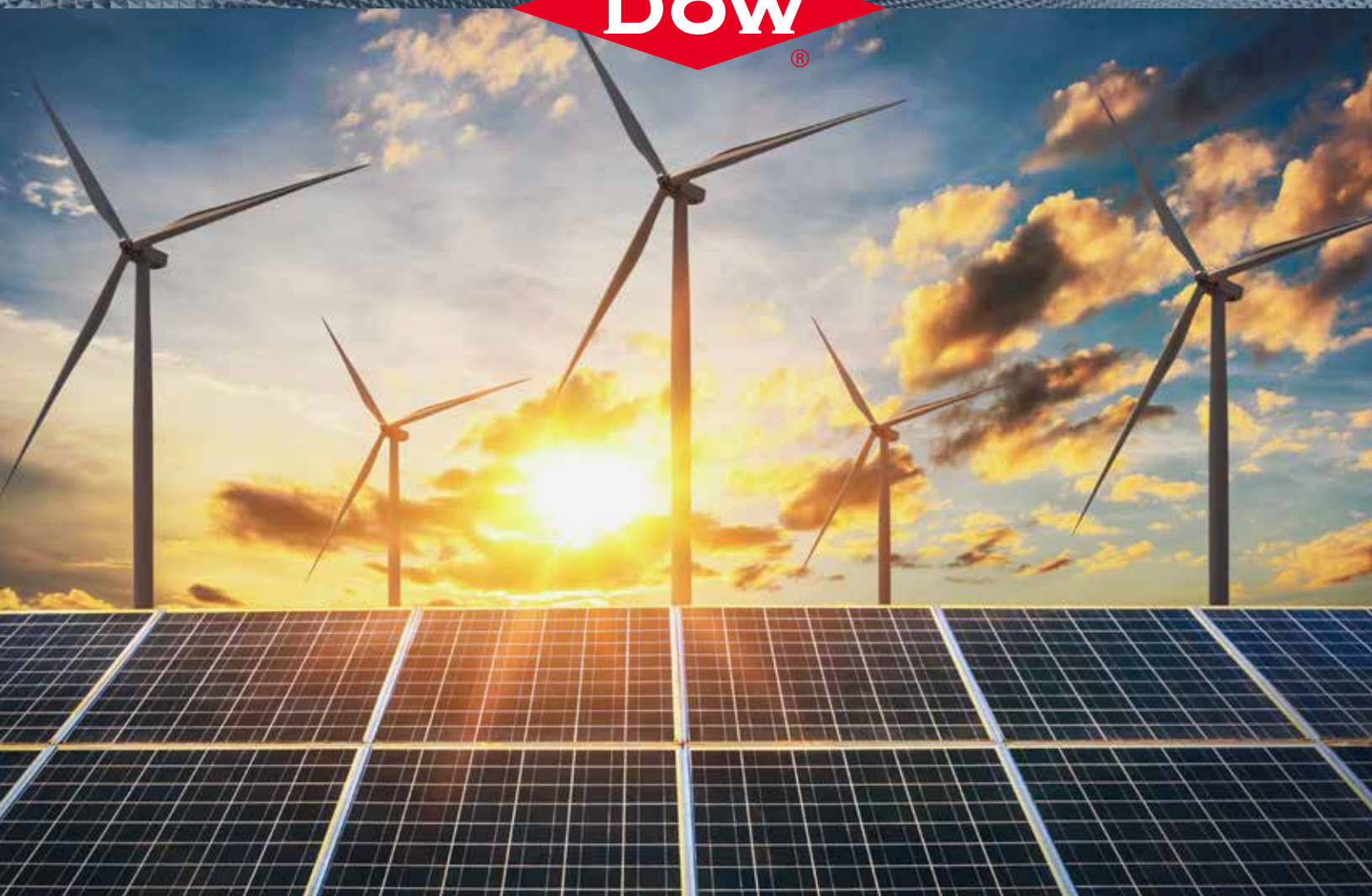


# Optimized precision, power and protection for industrial electronics applications

Product selection guide

The DOW logo is a red diamond shape with the word "DOW" in white, bold, sans-serif capital letters. A small registered trademark symbol (®) is located to the right of the word.

**DOW**®





# Creating innovative, sustainable energy solutions

Energy plays an enormously important role in a reliable infrastructure, while balancing the difficult compromise of expanding development and climate change transformation. Innovative solutions are central to building a green and renewable energy system that will help us in meeting the challenges ahead.

From the potting material for inverters and optimizers used in applications such as photovoltaics and wind power to the conductive adhesives used in battery management systems (BMS), renewable energy technologies from Dow have helped solve industry challenges in meaningful and sustainable ways.

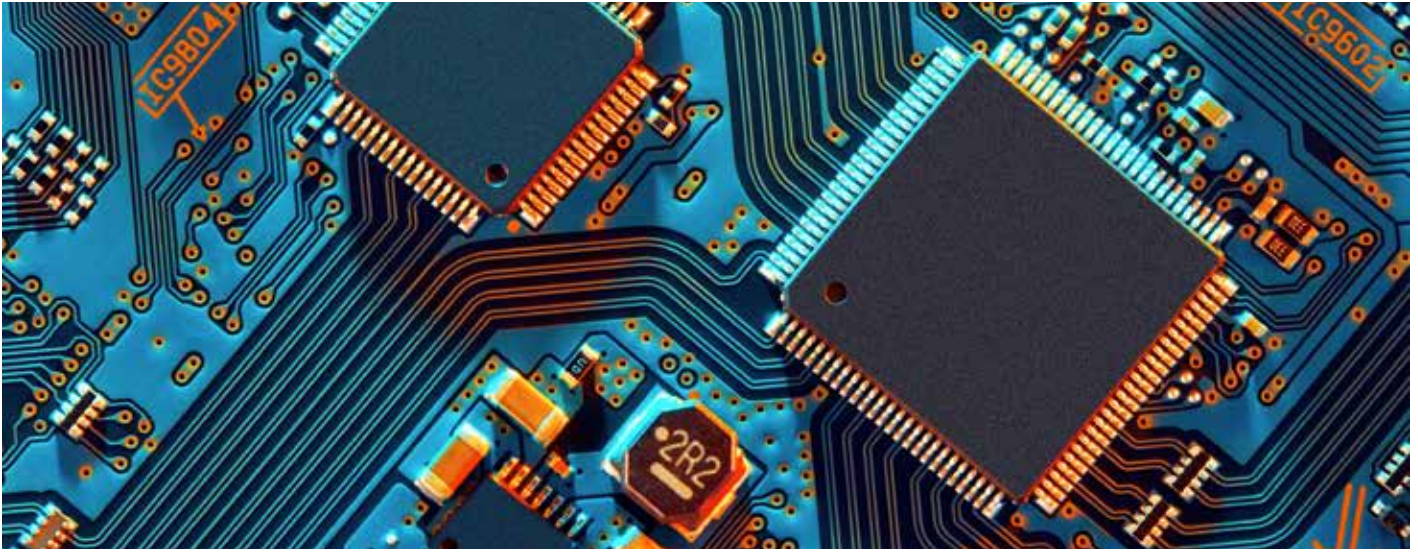
Our solutions for clean, renewable energy and related industrial electronics applications help public utilities, component manufacturers and customers save money, improve efficiency and meet the most challenging application requirements.

Applications include:

- **Inverters/optimizers.** Silicone solutions from Dow help protect and extend the lifespan of all types of inverters, power optimizers and other energy transformation components that operate in extreme temperatures and weather conditions.
- **Insulated-gate bipolar transistor (IGBT) power modules.** Silicone solutions from Dow exhibit very strong adaptability and durability to ensure the stable and efficient operation of systems.
- **Energy storage battery solutions.** Based on their outstanding reliability, silicones from Dow can help meet the constantly growing market demand in the areas of assembly, thermal management and circuit board protection.
- **Charging station.** Innovative silicones from Dow can help keep pace with constant generational upgrading and widespread installation of charging stations.
- **Industry and automation.** The rapid popularization of smart technology and artificial intelligence has transformed power transmission, power distribution, circuit protection, measurement, process automation and even analytical instruments used in manufacturing processes. Silicones from Dow can be used to boost the precision, performance and reliability of industrial equipment.

Whether your goal is to produce more power, to ensure a more reliable supply or to more efficiently use energy, Dow can help.





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## Why choose Dow Performance Silicones?

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Dow Performance Silicones has been a global leader in silicon-based technology for more than 70 years. Headquartered in Michigan, USA, we maintain manufacturing sites, sales and customer service offices, and research and development labs in every major geographic market worldwide, to ensure you receive fast, reliable support for your processing and application development needs.

### **Unique product technology**

To describe Dow Performance Silicones is to describe the history and evolution of silicone technology, which generated a legacy of innovative and reliable products under the Dow Corning label for more than seven decades. Today that legacy continues under the DOWSIL™ brand name, which encompasses more than 7,000 proven silicone products and services. Few companies offer a protective silicones portfolio with comparable breadth and proven performance, and none match our history in silicone technology.

### **Extensive know-how**

With increasing populations, the fast pace of economic development, the generational upgrading of innovative technologies, and the rise of new business types, global energy use is evolving and transitioning toward a low-carbon future. Dow is at the forefront of zero-carbon and clean energy development, multiplying the value of our products with deep in-house expertise, as well as an extended network of industry resources.

### **Collaborative culture**

Dow works closely with you to help reduce time, risk and cost at every stage of new product research and development.

### **Stability**

Dow Performance Silicones is continuously investing in manufacturing and technology – helping to fuel customer innovation through a consistent supply of proven silicone products.

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## Helping you to reach your precision, efficiency and durability goals

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Whether your goal is to improve precision of your manufacturing processes, use energy more efficiently or extend service life, Dow can help. Our innovative materials and solutions, developed over decades of application practice and insight, can effectively enhance the manufacturing performance and process precision of your complex equipment. In addition, our wide array of silicone materials can provide long-lasting protection for electronic components and assemblies to withstand extreme environments.



# Delivering greater power and efficiency and longer normal operating time

Our wide array of silicone materials can provide long-lasting protection for electronic components and assemblies to withstand extreme temperatures, mechanical strain and harsh chemical substances in the most demanding industrial and energy environments.

## Encapsulants

Product	Ratio	Color	Thermal -conductivity (W/m.K)	Shear adhesion strength
DOWSIL™ TC-6020 Encapsulant	Two-part (1:1)	Gray	2.7	Al: 0.3 MPa
DOWSIL™ TC-6015 Encapsulant	Two-part (1:1)	Gray	1.6	Al: 0.6 MPa
DOWSIL™ TC-4605 Encapsulant	Two-part (1:1)	Gray	1.0	Al: 0.5 MPa
DOWSIL™ CN-8760 G Encapsulant	Two-part (1:1)	Gray	0.67	–
DOWSIL™ CN-8760 Encapsulant	Two-part (1:1)	Dark gray	0.66	–
SYLGARD™ 160 Encapsulant	Two-part (1:1)	Dark gray	0.6	–
DOWSIL™ EE-3200 Encapsulant	Two-part (1:1)	Black	0.5	–
DOWSIL™ CN-7326 Encapsulant	Two-part (4:1)	White	0.5	Al: 1.0 MPa

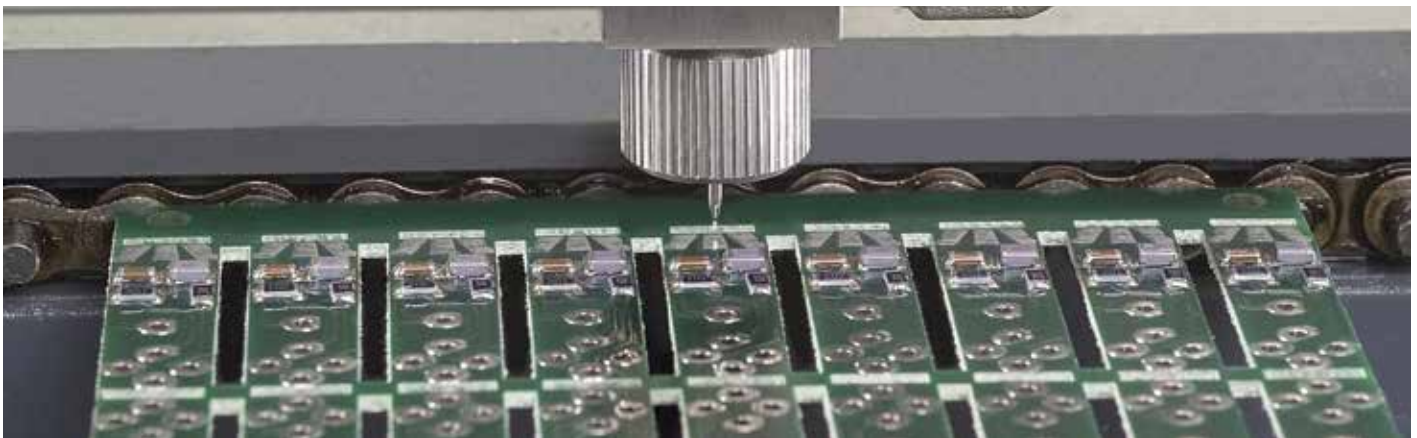
<sup>1</sup> Adhered to an aluminum thickness at a minimum thickness of 0.64 mm.



# Giving you longer service life

Sealants, coatings, adhesives and thermal interface materials based on Dow's advanced silicone technologies maintain their physical characteristics and outstanding performance in extreme environments. This can help protect and extend the lifespan of energy transformation components for all types of inverters, optimizers and other equipment that operate in extreme temperatures and weather conditions.

Curing time / temperature	Viscosity (cP)	Density (g/cm <sup>3</sup> )	Hardness	Dielectric strength (kV/mm)	Notes
23 mins @ 60°C 13 mins @ 80°C 5 mins @ 90°C	Part A: 10,800 Part B: 9,960 Mixed: 10,640	2.92	63 (Shore A)	24	UL94 V-0 @ 3.0 mm RTI 150°C
30 mins @ 70°C 4–5 hours @ 25°C	Part A: 4,300 Part B: 3,600 Mixed: 4,000	2.25	40 (Shore A)	18	UL94 V-0 @ 1.5 mm RTI 150°C
60 mins @ 120°C	Part A: 3,100 Part B: 2,500 Mixed: 2,900	1.67	30 (Shore A)	21	UL94 V-0 @ 1.5 mm RTI 150°C
24 hours @ 25°C 40 mins @ 50°C	Part A: 2,900 Part B: 3,200 Mixed: 3,200	1.58	45 (Shore A)	24	UL94 V-0 @ 2.5 mm RTI 150°C
24 hours @ 25°C 40 mins @ 50°C	Part A: 2,400 Part B: 2,397 Mixed: 2,850	1.60	52 (Shore A)	26	UL94 V-0 @ 5.0 mm RTI 150°C
24 hours @ 25°C	Part A: 6,000 Part B: 3,730 Mixed: 4,865	1.60	56 (Shore A)	19	UL94 V-0 @ 1.5 mm RTI 150°C
3 hours @ 25°C 20 mins @ 50°C	Part A: 1,400 Part B: 2,000 Mixed: 1,700	1.48	20 (Shore 00)	14	UL94 V-0 @ 0.7 ~ 2.0 mm <sup>1</sup> RTI 150°C
72 hours @ 25°C (Pot life ~30 mins)	Base: 4,842 Catalyst: 210 Mixed: 3,300	1.42	37 (Shore A)	25	UL94 V-0 @ 3.0 mm RTI 105°C

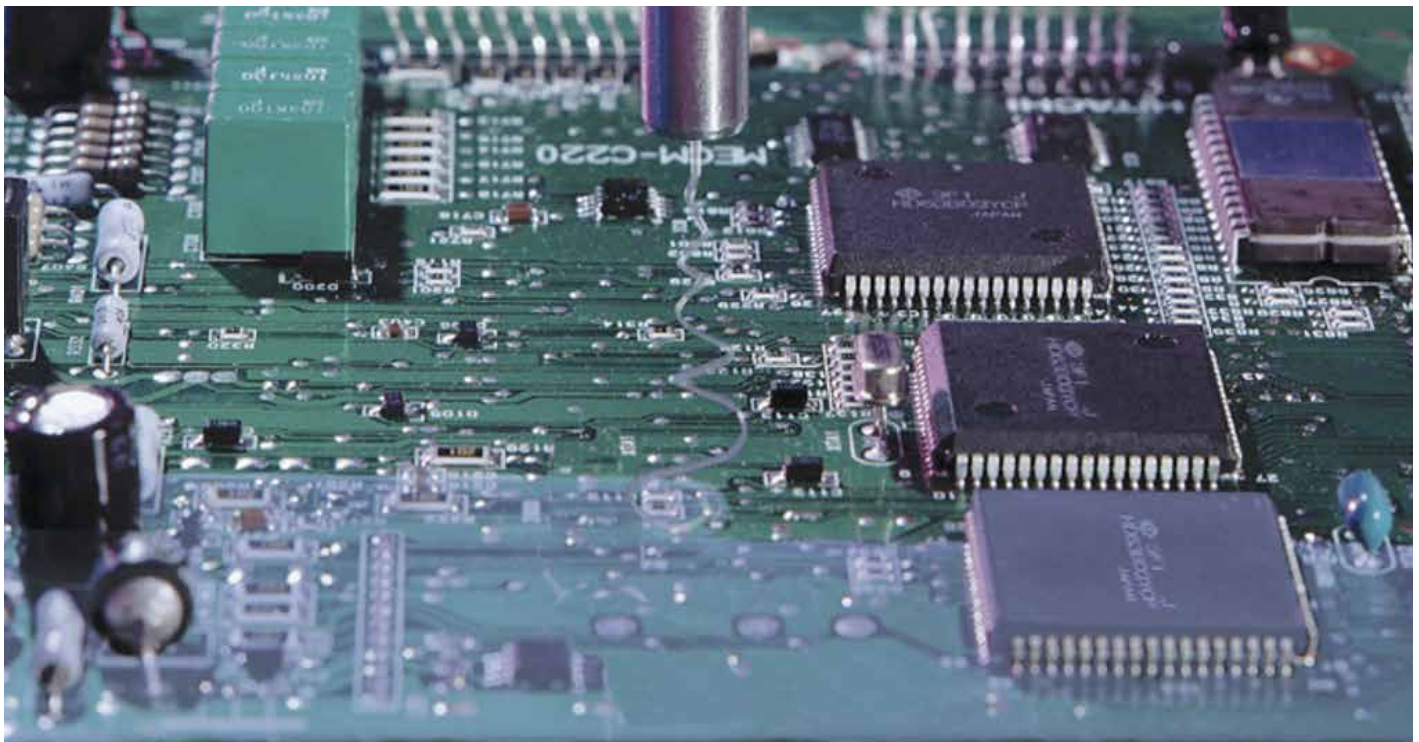


# Bringing you higher energy efficiency

Insulated-gate bipolar transistor (IGBT) power modules provide stable heat dissipation and efficient energy savings. With more and more importance placed on energy conservation and environmental protection, these have become widely applied in all types of applications. Silicone solutions from Dow exhibit very strong adaptability and durability to ensure stable and efficient operation of systems.

## Silicone gels

Product	Ratio	Color	Viscosity (cP)	Curing time / temperature
DOWSIL™ 3-6635 Dielectric Gel	One-part	Transparent	700	120 mins @ 100°C
DOWSIL™ EG-3810 Dielectric Gel	One-part	Transparent	690	15 mins @ 125°C 10 mins @ 150°C
DOWSIL™ EG-3896 Dielectric Gel	Two-part (1:1)	Transparent	Part A: 560 Part B: 330 Mixed: 520	30 mins @ 70°C 10 mins @ 100°C 5 mins @ 150°C
DOWSIL™ Q3-6575 Dielectric Gel	Two-part (1:1)	Transparent	Part A: 750 Part B: 750 Mixed: 750	24 hours @ 25°C
SYLGARD™ 527 Dielectric Gel	Two-part (1:1)	Transparent	Part A: 470 Part B: 454 Mixed: 465	60 mins @ 150°C





Working time	Gel time	Density (g/cm <sup>3</sup> )	Gel hardness (grams)	Dielectric strength (kV/mm)	Notes
-	10 mins @ 135°C	1.0	70	20	Flame retardant rating: UL94 HB Temperature range: -80 to 175°C
--	-	0.97	78	21	Temperature range: -60 to 200°C
> 4 hours	-	0.98	220	22	Flame retardant rating: UL94 V-1 Temperature range: -45 to 185°C
-	5.8 mins @ 135°C	1.0	75	18	Temperature range: -80 to 175°C
1.98 hours	-	0.95	113	17	Flame retardant rating: UL94 HB Temperature range: -45 to 150°C

DOWSIL™ Silicone Gels combine the stress relief and self-healing qualities of a liquid with the dimensional stability of an elastomer. They cure into a soft material, provide excellent dielectric insulation and maintain stability – even at high temperatures. Because these gels are soft to extremely soft, they are gentle with thin or sensitive wire-bonds ... and with sensitive components and solder joints. Due to these properties, they help protect electronic components from thermal stress resulting from a mismatch in the coefficient of thermal expansion (CTE) of the diverse materials on the circuit board.

In addition to our standard gel portfolio, we also offer specialty gels that can be ideal for more-specialized applications.

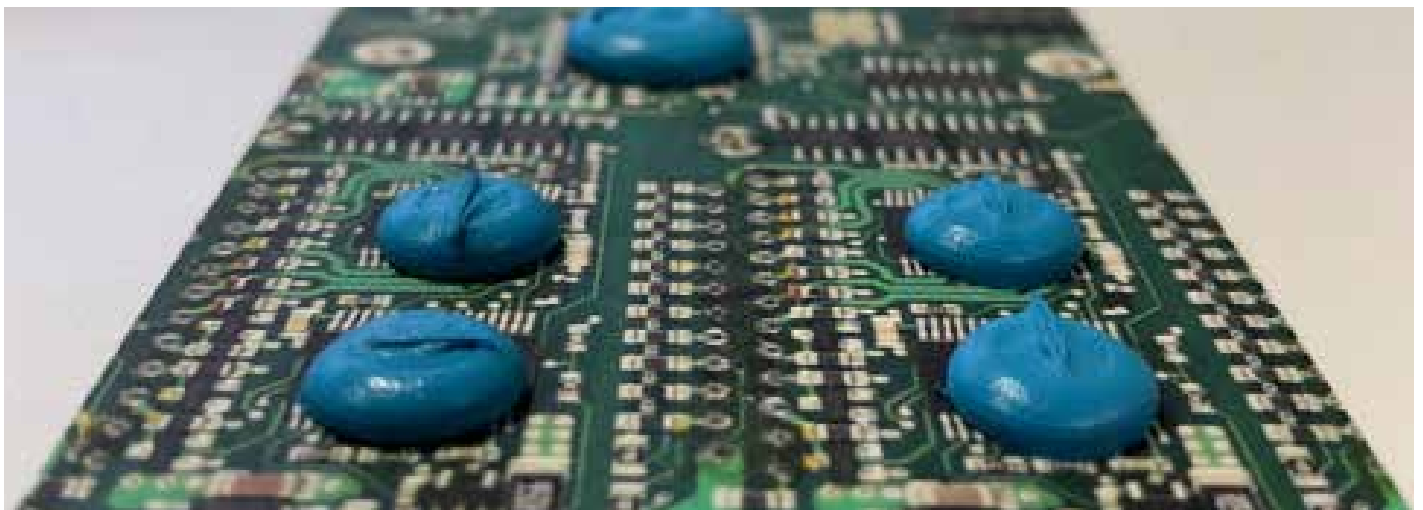


## Bonding and sealing

Product	One- or two-part	Color	Viscosity
DOWSIL™ 7091 Adhesive	One-part	White, gray, black	185 g/min (extrusion rate)
DOWSIL™ 3-6265 HP Adhesive	One-part	Black	1,020,000 cP
DOWSIL™ SE-9186 Adhesive	One-part	Translucent	64,000 cP

## Thermally conductive compounds

Product	One- or two-part	Color	Thermal conductivity (W/m.K)
DOWSIL™ TC-5888 Thermally Conductive Compound	One-part	Gray	5.2
DOWSIL™ TC-5622 Thermally Conductive Compound	One-part	Gray	4.3
DOWSIL™ TC-5021 Thermally Conductive Compound	One-part	Gray	3.3
DOWSIL™ TC-5121 C Thermally Conductive Compound	One-part	Greenish yellow	2.8
DOWSIL™ SC 4471 CV Thermally Conductive Compound	One-part	White	2.0
DOWSIL™ TC-5080 Thermally Conductive Compound	One-part	White	1.0





Tack-free time	Curing time / temperature	Hardness	Shear adhesion strength	Notes
28 mins	7 days @ 25°C	32 (Shore A)	Al: 2.0 MPa	UL94 V-1
NA	240 mins @ 100°C 50 mins @ 120°C 10 mins @ 150°C	68 (Shore A)	Al: 5.7 MPa	NA
8 mins	72 hours @ 25°C	20 (Shore A)	Al: 1.3 MPa	Controlled volatility: D4-D10 content 35 ppm

Viscosity (cP)	Density (uncured)	Dielectric strength (kV/mm)	Thermal resistance (cm <sup>2</sup> °C/W)
120,000	2.6	NA	0.05
95,000	2.5	NA	0.06
82,650	3.47	5.0	0.2
79,000	4.2	1.9	0.09
116,000	2.76	NA	NA
836,000	2.1	8.7	NA

In the areas of bonding and sealing, our silicone adhesives encompass a broad and diverse spectrum of viscosities and curing chemical properties. They operate reliably across a wide working temperature range, providing outstanding primer-free adhesive force and mechanical stress damping.

To effectively manage higher internal temperatures found in IGBT modules, we also provide thermally conductive silicone materials to guide harmful heat away from sensitive components, enhancing reliability and performance.

## Batteries/thermal management

Leveraging decades of application know-how, our materials and innovations can help complex equipment maintain long-lasting reliable performance to meet growing market demand in the areas of assembly, thermal management and circuit board protection.

	Product	One- or two-part	Color	Thermal conductivity (W/m.K)	Shear adhesion strength
Adhesives	DOWSIL™ TC-2035 Thermally Conductive Adhesive	Two-part (1:1 mix ratio)	Part A: White Part B: Reddish brown	3.3	Al: 381 psi, 2.63 MPa, 263 N/cm <sup>2</sup> Cu: 416 psi, 2.87 MPa, 287 N/cm <sup>2</sup>
	DOWSIL™ SE 4485 Thermally Conductive Adhesive	One-part	White	2.8	Glass-to-glass: 168 psi, 1.2 MPa, 120 N/cm <sup>2</sup>
	DOWSIL™ TC-2030 Thermally Conductive Adhesive	Two-part (1:1 mix ratio)	Gray	2.7	Al: 435 psi, 3 MPa, 300 N/cm <sup>2</sup>
	DOWSIL™ SE 4485 L Thermally Conductive Adhesive	One-part	White	2.2	Glass-to-glass: 262 psi, 1.8 MPa, 180 N/cm <sup>2</sup>
	DOWSIL™ SE 4486 Thermally Conductive Adhesive	One-part	White	1.6	Glass-to-glass: 240 psi, 1.65 MPa, 165 N/cm <sup>2</sup>
Encapsulants	DOWSIL™ TC-6015 Thermally Conductive Encapsulant	Two-part (1:1 mix ratio)	Gray	1.6	Al: 0.6 MPa
	DOWSIL™ TC-4605 Thermally Conductive Encapsulant	Two-part (1:1 mix ratio)	Gray	1	Al: 0.5 MPa
Gap fillers	DOWSIL™ TC-4535 CV Thermally Conductive Gap Filler	Two-part (1:1 mix ratio)	Part A: White Part B: Blue	3.5	NA
	DOWSIL™ TC-4525 Thermally Conductive Gap Filler	Two-part (1:1 mix ratio)	Part A: White Part B: Blue	2.6	NA
	DOWSIL™ TC-5515 LT Thermally Conductive Gap Filler	Two-part (1:1 mix ratio)	Part A: White Part B: Blue	2.0	Al: 0.2 MPa
	DOWSIL™ TC-4515 Thermal Gap Filler	Two-part (1:1 mix ratio)	Part A: White Part B: Blue	1.8	NA

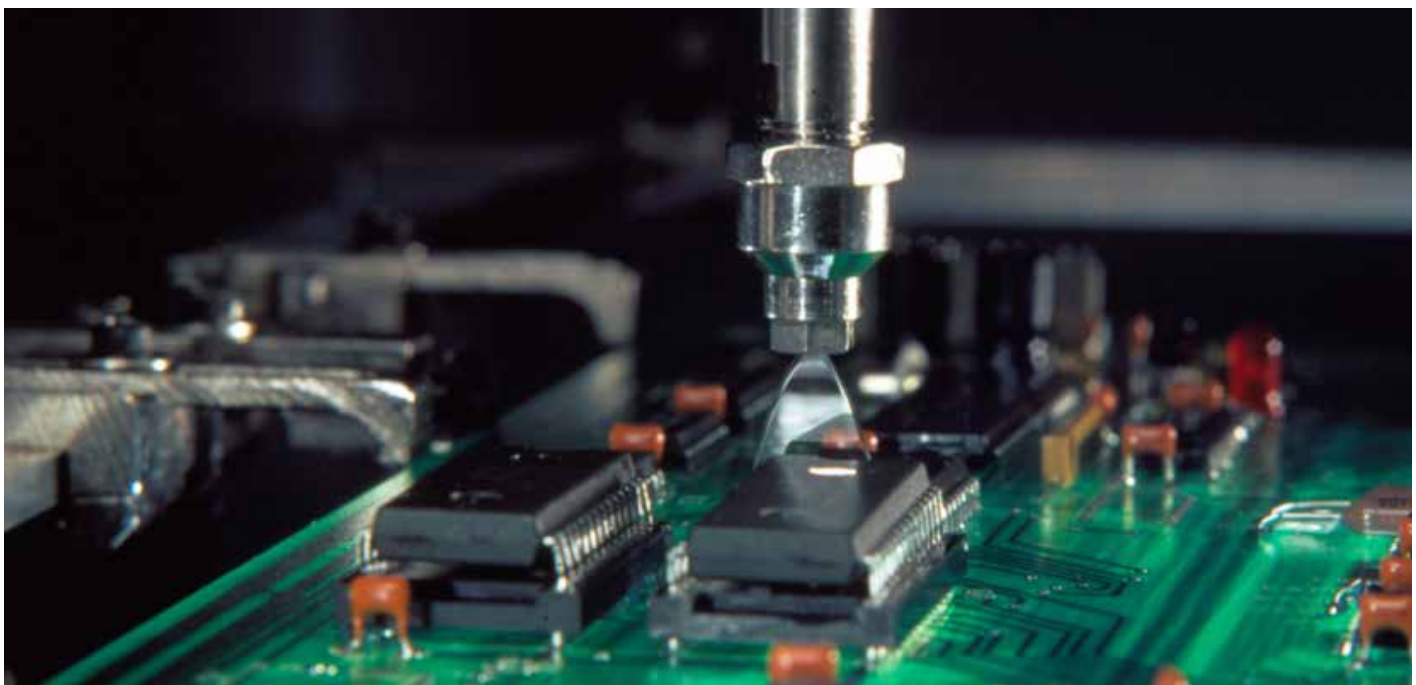
Curing time / temperature	Viscosity (cP)	Density (g/cm <sup>3</sup> )	Hardness	Notes
30 mins @ 125°C 10 mins @ 150°C	Part A: 130,000 Part B: 118,000 Mixed: 125,000	Uncured: 3.0	95 (Shore A [JIS]) 45 (Shore D)	–
Tack-free time @ <25°C: 10 mins	Fluidity: 54 mm	Cured: 2.9	90 (Shore A [JIS])	UL94 V-0
60 mins @ 130°C	Part A: 250,000 Part B: 200,000 Mixed: 220,000	Uncured: 2.9	92 (Shore A)	–
Tack-free time @ < 25°C: 8 mins	Fluidity: 47.4 mm	Cured: 2.84	90 (Shore A [JIS])	–
Tack-free time @ < 25°C: 4 mins	19,600 Fluidity: 60 mm	Cured: 2.6	81 (Shore A [JIS])	–
30 mins @ 70°C 4–5 hours @ 25°C	Part A: 4,300 Part B: 3,600 Mixed: 4,000	Cured: 2.25	40 (Shore A)	UL94 V-0 @ 1.5 mm RTI 150°C
60 mins @ 120°C	Part A: 3,100 Part B: 2,500 Mixed: 2,900	Cured: 1.67	30 (Shore A)	UL94 V-0 @ 1.5 mm RTI 150°C
2 hrs @ 25°C	Part A: 200,000 Part B: 230,000 Mixed: 205,000	Cured: 3.10	52 (Shore 00) 18 (JISE)	UL94 V-0
2 hrs @ 25°C 20 mins @ 50°C 10 mins @ 80°C	Part A: 207,000 Part B: 193,000 Mixed: 217,000	Cured: 2.88	55 (Shore 00)	UL94 V-0
360 mins @ 25°C 30 mins @ 80°C	Part A: 150,000 Part B: 120,000 Mixed: 140,000	Cured: 1.95	65 (Shore 00)	UL94 V-0
2.5 hrs @ 25°C 30 mins @ 80°C	Part A: 215,000 Part B: 230,000 Mixed: 240,000	Cured: 2.70	50 (Shore 00)	UL94 V-0

# Battery management systems (BMS)

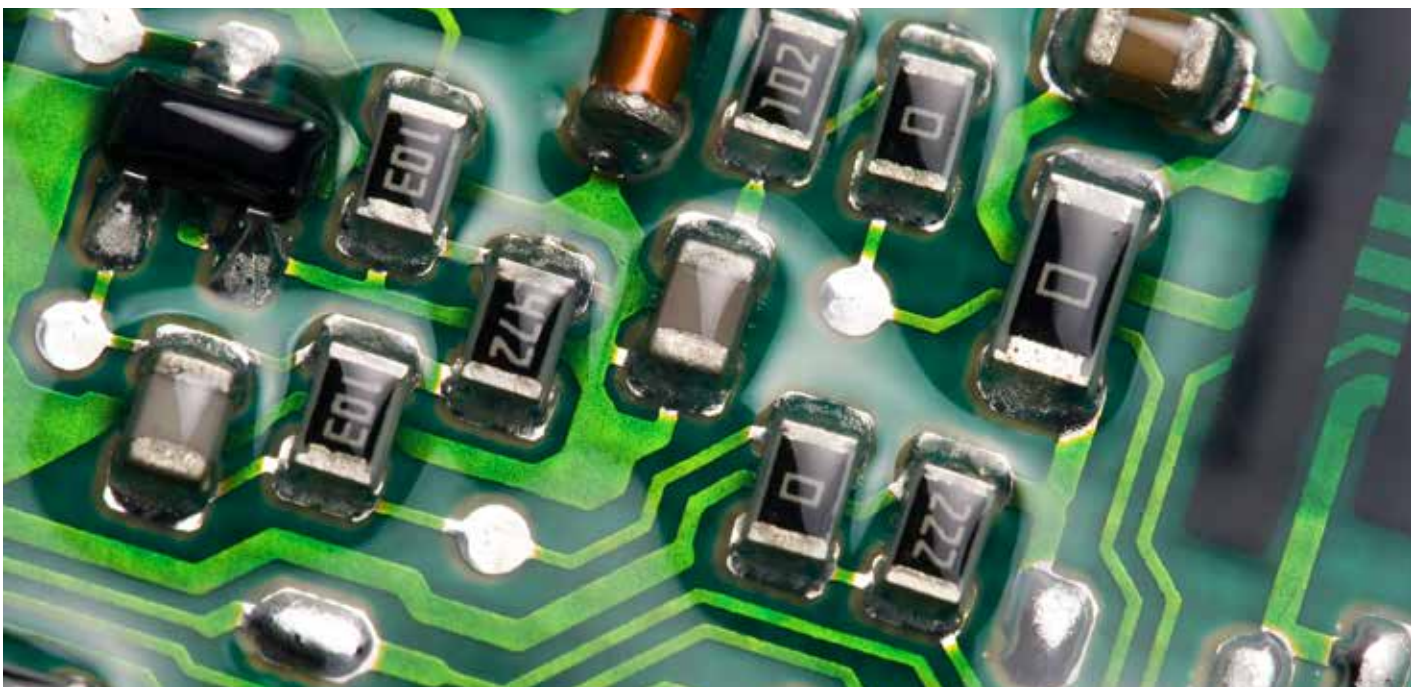
## Circuit board protection

Product		One- or two-part	Color	Viscosity (cP)	Density (g/cm <sup>3</sup> )
Conformal coatings	DOWSIL™ 1-2577 Low VOC Conformal Coating	One-part	Transparent	1,050	Cured: 1.12
	DOWSIL™ 3-1953 Conformal Coating	One-part	Transparent	350	Cured: 0.98
	DOWSIL™ 3-1965 Conformal Coating	One-part	Transparent	115	Cured: 0.99
	DOWSIL™ CC-3122 Conformal Coating	One-part	Transparent	80	Cured: 1.03
	DOWSIL™ CC-8030 UV and Moisture Dual Cure Conformal Coating	One-part	Transparent	520	Cured: 0.98
Gels	DOWSIL™ EG-4200 Dielectric Tough Gel	Two-part (1:1 mix ratio)	Blue	Parts A / B: 400	Cured: 0.97
	DOWSIL™ EG-4230 Gel	Two-part (1:1 mix ratio)	Black	Part A: 350 Part B: 310 Mixed: 480	Cured: 0.97

<sup>(1)</sup> Tack-free time refers to the time needed for the product to form into a non-stick surface when coated on polyethylene film.



Tack-free time <sup>(1)</sup> / temp	Non-volatile chemical (NVC) content (%)	Hardness	Notes
6 mins @ 25°C 1.5 mins @ 60°C (15% relative humidity)	~33.6	85 (Shore A) 25 (Shore D)	UL94 V-0; MIL I-46058C amended 7; IPC-CC-830B; UL746E
8 mins @ 25°C 0.5 mins @ 60°C (15% relative humidity)	~99.4	34 (Shore A)	UL94 V-0; MIL I-46058C amended 7; IPC-CC-830B; UL746E
6 mins @ 25°C	~99.5	33 (Shore A)	UL94 V-0; MIL I-46058C amended 7; IPC-CC-830 Amendment 1
Skin over: 6 mins @ 25°C (50% relative humidity)	~90.0	75 (Shore A)	UL94 V-0; Controlled volatility: D4-D10 content <100 ppm
7 secs (300 mW/cm <sup>2</sup> )	~95.0	30 (Shore A)	UV fast curing
-	-	61 (Shore 00)	UV indicator for inspection; UL94 V-1 @ 10.9 mm
Gel time: 13 mins @ 25°C	-	33 (Shore 00)	UL94 HB



# Batteries

## Assembly (adhesives, conductives and foams)

Product		One- or two-part	Color	Viscosity (cP)	Density (g/cm <sup>3</sup> )
Adhesives	DOWSIL™ 7091 Adhesive Sealant <sup>(1)</sup>	One-part	Black, white, gray	Extrusion rate: 185 g/min	1.4
	DOWSIL™ EA-3838 Fast Adhesive	Two-part (Base: catalyst mix ratio by volume: 2:1)	Base: White Catalyst: Black	55,000 - 700,000 @ 1S <sup>-1</sup> 75,000 - 100,000 @ 10S <sup>-1</sup>	Base: 1.34 Catalyst: 1.60
	DOWSIL™ EA-4700 CV Adhesive	Two-part (1:1 mix ratio)	Part A: White Part B: Black	Part A: 24,000 Part B: 18,000 Mixed: 27,000	1.16
	DOWSIL™ EA-5151 Assembly Adhesive <sup>(4)</sup>	One-part	Black	60,000 @ 120°C	1.08
	DOWSIL™ SE 9168 RTV Adhesive	One-part	Gray	–	Cured: 1.32
	DOWSIL™ SE 9185 Clear or White Adhesive	One-part	Transparent or white	–	Cured: 1.05
Conductive	DOWSIL™ EC-6601 Electrically Conductive Adhesive	One-part	Brown	Initial extrusion rate: 2.20 g/min	3.37
Foam	DOWSIL™ 3-8209 Silicone Foam <sup>(5)</sup>	Two-part (1:1 mix ratio)	Part A: Dark gray Part B: Colorless	Part A: 11,000–17,000 Part B: 12,000–17,000	Part A: 1.07 Part B: 1.01 Density: 0.2–0.28 (Curing @ < 23°C and measurement after 24 hours)
	SILASTIC™ 3-8186 Thixotropic Foam	Two-part (1:1)	Part A: Black Part B: Off-white	Part A: 135,000 Part B: 125,000	Part A: 1.12 Part B: 1.22

<sup>(1)</sup> Used for formed in place gasket (FIPG) material; mechanical characteristics: 23°C (73°F), curing 7 days in 50% relative humidity air.

<sup>(2)</sup> Tack-free time refers to the time needed for the product to form into a non-stick surface when coated on polyethylene film.

<sup>(3)</sup> Measured after cold curing for 7 days.

<sup>(4)</sup> Data for newly developed products. DOWSIL™ EA-5151 Assembly Adhesive uses organic silicone technology to achieve good initial strength and is cured into strong moisture curing silicone adhesive.

<sup>(5)</sup> The design entails dispensing and curing on the part to form an integrated compression gasket.

Curing time / temperature	Shear adhesion strength	Hardness	Tensile strength (MPa)	Elongation at break (%)	Notes
Cold curing when exposed to air humidity; Tack-free time <sup>(2)</sup> : 28 mins	Aluminum: 2.0 MPa	32 (Shore A)	2.5	680	UL94 V-1
Snaptime: 2-3 mins Tack-free time <sup>(2)</sup> : 5-8 mins	Glass/Al-1.2 MPa Glass/PC-1.2MPa Glass/ABS-1.0 MPa	40 (Shore A) <sup>(3)</sup>	>1.5	>250	UL94 V-1
120 mins @ 25°C	Aluminum: 1.2 MPa @ 2 hrs 2.2 MPa @ 8 hrs 3.1 MPa @ 24 hrs 3.9 MPa @ 72 hrs	19 (Shore A [JIS])	3.7	630	Fast curing, Controlled volatility: D4-D10 content 130 ppm
Cold curing when exposed to air humidity	PC adhesion strength for 1 day: 0.5 MPa 7 days: 1.7 MPa	55-57 (Shore A)	4.5-4.7	> 900	Can be used on standard hot melt equipment
Cold curing when exposed to air humidity; Tack-free time <sup>(2)</sup> @ <25°C: 6.5 mins	Glass: 275 psi, 1.9 MPa, 189 N/cm <sup>2</sup>	44 (Shore A [JIS])	3.69	363	UL94 V-0
Cold curing when exposed to air humidity; Tack-free time <sup>(2)</sup> @ <25°C: 8 mins	Glass: 120 N/cm <sup>2</sup>	31 (Shore A)	3	515	-
Skin over: 30 mins	Aluminum: 1.30	80 (Shore A)	1.51	194	Volume resistivity: 2.7E -3 ohm *cm Shielding effectiveness: 86 dB
10 mins @ 25°C + 1 hour @ 100°C post-curing	-	45 (Shore 00)	-	-	70°C, 22 hours, compression rate at 50% compression: No post-curing: 32% 100°C post-curing 1 hour: 4% Stress at 50% compression— Strain characteristics: 74 KPa
10 mins @ 75°C Snap time: 3.5 mins	-	35 (Shore 00)	0.18	140	UL 157 – Standard for gaskets and seals; UL 50E – Enclosures for electrical equipment, environmental considerations

Novel materials from Dow may undergo changes in composition, special characteristics, benefits and other properties. Dow cannot guarantee future product utility. You will need to determine the suitability of the product for your expected use. The product is provided based on the current situation, with no guarantee that the product is defect-free. No explicit or implicit guarantees are provided in any way, including but not limited to guarantees of marketability or fitness for a particular purpose.

## Assembly (CIPG)

Product		One- or two-part	Color	Extrusion rate (g/min)	Density (g/cm <sup>3</sup> )	Curing time / temperature
CIPG (cured in place gasket)	SILASTIC™ RBL-9694-20P A&B Liquid Silicone Rubber	Two-part (1:1 mix ratio)	Part A: Black Part B: White	<sup>(1)</sup> Part A: 119 Part B: 282	1.17	165 secs @ 115°C, T90%
	SILASTIC™ RBL-9694-30P A&B Liquid Silicone Rubber	Two-part (1:1 mix ratio)	Part A: Black Part B: White	<sup>(1)</sup> Part A: 75 Part B: 178	1.2	46 secs @ 115°C, T90%
	SILASTIC™ RBL-9694-45M A&B Liquid Silicone Rubber	Two-part (1:1 mix ratio)	Part A: Black Part B: White	<sup>(1)</sup> Part A: 77 Part B: 98	1.2	34 secs @ 115°C, T90%

<sup>(1)</sup> Extrusion rate: 3.18 mm dispensing head at 0.62 MPa

## Circuit

Product		One- or two-part	Color	Viscosity (cP)	Density (g/cm <sup>3</sup> )
Conformal coatings	DOWSIL™ 1-2577 Low VOC Conformal Coating	One-part	Transparent	1,050	Cured: 1.12
	DOWSIL™ 3-1953 Conformal Coating	One-part	Translucent	350	Cured: 0.98
	DOWSIL™ 3-1965 Conformal Coating	One-part	Translucent	115	Cured: 0.99
	DOWSIL™ CC-3122 Conformal Coating	One-part	Transparent	80	Cured: 1.03
	DOWSIL™ CC-8030 UV and Moisture Dual Cure Conformal Coating	One-part	Transparent	520	Cured: 0.98

<sup>(1)</sup> Tack-free time refers to the time needed for the product to form into a non-stick surface when coated on polyethylene film.





Hardness	Tensile strength (MPa)	Elongation at break (%)	100% modulus (MPa)	Tear strength (crescent) (kN/m)	Compression rate @ -25% compression	Shear adhesion strength (MPa)
20 (Shore A)	5.9	925	0.39	13	Compression rate @ 132°C, 22 hours: 36	Vinyl (10 mins @ 150°C): 1.3
30 (Shore A)	7.2	820	0.8	14	Compression rate @ 177°C, 22 hours: 31	Al (10 mins @ 150°C): 1.0
45 (Shore A)	7.25	600	1.45	45	Compression rate @ 177°C, 22 hours: 29	Al (10 mins @ 150°C): 1.64 A66 GF30 (10 mins @ 150°C): 1.35

Tack-free time <sup>(1)</sup> / temperature	Non-volatile chemical (NVC) content (%)	Hardness	Notes
6 mins @ 25°C 1.5 mins @ 60°C (15% relative humidity)	~33.6	85 (Shore A) 25 (Shore D)	UL94 V-0; MIL I-46058C amended 7; IPC-CC-830B; UL746E
8 mins / 25°C 0.5 mins @ 60°C (15% relative humidity)	~99.4	34 (Shore A)	UL94 V-0; MIL I-46058C amended 7; IPC-CC-830B; UL746E
6 mins @ 25°C	~99.5	33 (Shore A)	UL94 V-0; MIL I-46058C amended 7; IPC-CC-830 Amendment 1
Skin over: 6 mins @ 25°C (50% relative humidity)	~90.0	75 (Shore A)	UL94 V-0; Controlled volatility: D4-D10 content <100 ppm
7 secs (300 mW/cm <sup>2</sup> )	~95.0	30 (Shore A)	UV fast curing



## Energy storage

With the constant generational upgrading and widespread installation of charging piles, silicone solutions from Dow have continuously provided trustworthy, innovative products such as all types of thermal management materials, assembly bonding materials, and circuit board protection materials as well as electrical components for energy transformation and power.

### Thermal management

Product		One- or two-part	Color	Thermal conductivity (W/m.K)	Shear adhesion strength MPa
Encapsulants	DOWSIL™ TC-6020 Encapsulant	Two-part (1:1 mix ratio)	Gray	2.7	Al: 0.3
	DOWSIL™ TC-6015 Encapsulant	Two-part (1:1 mix ratio)	Gray	1.6	Al: 0.6
	DOWSIL™ TC-4605 Encapsulant	Two-part (1:1 mix ratio)	Gray	1	Al: 0.5

### Assembly

Product		One- or two-part	Color	Viscosity (cP)	Density (g/cm <sup>3</sup> )
Adhesives	DOWSIL™ 7091 RTV Adhesive	One-part	Black, white, gray	Extrusion rate: 185 g/min	1.4
	DOWSIL™ EA-3838 Fast Adhesive	Two-part (Base: catalyst mix ratio by volume: 2:1)	Base: White Catalyst: Black	55,000 - 700,000 @ 1S <sup>-1</sup> 75,000 - 100,000 @ 10S <sup>-1</sup>	Base: 1.34 Catalyst: 1.60
	DOWSIL™ EA-9189H RTV Adhesive	One-part	White	-	Cured: 1.68
Conductive	DOWSIL™ EC-6601 Electrically Conductive Adhesive	One-part	Brown	Initial extrusion rate @ g/min: 2.20	3.37



Curing time / temperature	Viscosity (cP)	Density (g/cm <sup>3</sup> )	Hardness	Notes
23 mins @ 60°C, T90 13 mins @ 80°C, T90 5 mins @ 100°C, T90	Part A: 10,800 Part B: 9,960 Mixed: 10,640	Cured: 2.926	63 (Shore A)	UL94 V-0 @ 3.0 mm RTI 150°C
30 mins @ 70°C 4-5 hours @ 25°C	Part A: 4,300 Part B: 3,600 Mixed: 4,000	Cured: 2.25	40 (Shore A)	UL94 V-0 @ 1.5 mm RTI 150°C
60 mins @ 120°C	Part A: 3,100 Part B: 2,500 Mixed: 2,900	Cured: 1.67	30 (Shore A)	UL94 V-0 @ 1.5 mm RTI 150°C

Curing time / temperature	Shear adhesion strength	Hardness	Tensile strength (MPa)	Elongation at break (%)	Notes
Cold curing when exposed to air humidity; Tack-free time <sup>(1)</sup> @ 25°C: 28 mins	Al: 2.0 MPa	32 (Shore A)	2.5	680	UL94 V-1
Snaptime: 2-3 mins Tack-free time <sup>(3)</sup> : 5-8 mins	Glass/Al-1.2 MPa Glass/PC-1.2MPa Glass/ABS-1.0 MPa	40 (Shore A) <sup>(4)</sup>	>1.5	>250	UL94 V-1
Cold curing when exposed to air humidity; Tack-free time <sup>(1)</sup> @ 25°C: 2 mins	Al: 2.2 MPa Cu: 2.3 MPa PC: 1.2 MPa FR4: 2.4 MPa	80 (Shore A)	3.9	32	Thermal conductivity: 0.88 W/mK UL94 V-0
Tack-free time <sup>(1)</sup> : 30 mins	Al: 1.30 MPa	80 (Shore A)	1.51	194	Volume resistivity: 2.7E -3 ohm *cm Shielding effectiveness: 86 dB

<sup>(1)</sup> Tack-free time refers to the time needed for the product to form into a non-stick surface when coated on polyethylene film.



## Assembly (continued)

Product		One- or two-part	Color	Thermal conductivity (W/m.K)	Shear adhesion strength
Gap fillers	DOWSIL™ TC-4535 CV Thermally Conductive Gap Filler	Two-part (1:1 mix ratio)	Part A: White Part B: Blue	3.5	NA
	DOWSIL™ TC-4525 Thermally Conductive Gap Filler	Two-part (1:1 mix ratio)	Part A: White Part B: Blue	2.6	NA
	DOWSIL™ TC-5515 LT Thermally Conductive Gap Filler	Two-part (1:1 mix ratio)	Part A: White Part B: Blue	2.0	AI: 0.2 MPa
	DOWSIL™ TC-4515 Thermal Gap Filler	Two-part (1:1 mix ratio)	Part A: White Part B: Blue	1.8	NA

## Protection

Product		One- or two-part	Color	Viscosity (cP)	Density (g/cm <sup>3</sup> )
Conformal coatings	DOWSIL™ 1-2577 Low VOC Conformal Coating	One-part	Transparent	1,050	Cured: 1.12
	DOWSIL™ 3-1953 Conformal Coating	One-part	Transparent	350	Cured: 0.98
	DOWSIL™ 3-1965 Conformal Coating	One-part	Transparent	115	Cured: 0.99
	DOWSIL™ CC-3122 Conformal Coating	One-part	Transparent	80	Cured: 1.03
	DOWSIL™ CC-8030 UV and Moisture Dual Cure Conformal Coating	One-part	Transparent	520	Cured: 0.98
Gels	DOWSIL™ EG-4200 Dielectric Tough Gel	Two-part (1:1 mix ratio)	Blue	Parts A / B: 400	Cured: 0.97
	DOWSIL™ EG-4230 Gel	Two-part (1:1 mix ratio)	Black	Part A: 350 Part B: 310 Mixed: 480	Cured: 0.97

<sup>(1)</sup> Tack-free time refers to the time needed for the product to form into a non-stick surface when coated on polyethylene film.

Curing time/temperature	Viscosity (cP)	Density (g/cm <sup>3</sup> )	Hardness	Notes
2 hrs @ 25°C	Part A: 200,000 Part B: 230,000 Mixed: 205,000	Cured: 3.10	52 (Shore 00) 18 (JISE)	UL94 V-0
2 hrs @ 25°C 20 mins @ 50°C 10 mins @ 80°C	Part A: 207,000 Part B: 193,000 Mixed: 217,000	Cured: 2.88	55 (Shore 00)	UL94 V-0
360 mins @ 25°C 30 mins @ 80°C	Part A: 150,000 Part B: 120,000 Mixed: 140,000	Cured: 1.95	65 (Shore 00)	UL94 V-0
2.5 hrs @ 25°C 30 mins @ 80°C	Part A: 215,000 Part B: 230,000 Mixed: 240,000	Cured: 2.70	50 (Shore 00)	UL94 V-0

Tack-free time <sup>(1)</sup> / temperature	Non-volatile chemical (NVC) content (%)	Hardness	Notes
6 mins @ 25°C 1.5 mins @ 60°C (15% relative humidity)	~33.6	85 (Shore A) 25 (Shore D)	UL94 V-0; MIL I-46058C amended 7; IPC-CC-830B; UL746E
8 mins @ 25°C 0.5 mins @ 60°C (15% relative humidity)	~99.4	34 (Shore A)	UL94 V-0; MIL I-46058C amended 7; IPC-CC-830B; UL746E
6 mins @ 25°C	~99.5	33 (Shore A)	UL94 V-0; MIL I-46058C amended 7; IPC-CC-830 Amendment 1
Skin over: 6 mins @ 25°C (50% relative humidity)	~90.0	75 (Shore A)	UL94 V-0; Controlled volatility: D4-D10 content <100 ppm
7 secs (300 mW/cm <sup>2</sup> )	~95.0	30 (Shore A)	UV fast curing
-	-	61 (Shore 00)	UV indicator for inspection; UL94 V-1 @ 10.9 mm
Gel time: 13 mins @ 25°C	-	33 (Shore 00)	UL94 HB

# Enhancing process excellence

The rapid popularization of smart technology and artificial intelligence has transformed power transmission, power distribution, circuit protection, measurement, process automation and even analytical instruments used in manufacturing processes. Silicones from Dow can boost the precision, performance and eco-friendliness of industrial equipment.

## Thermal management

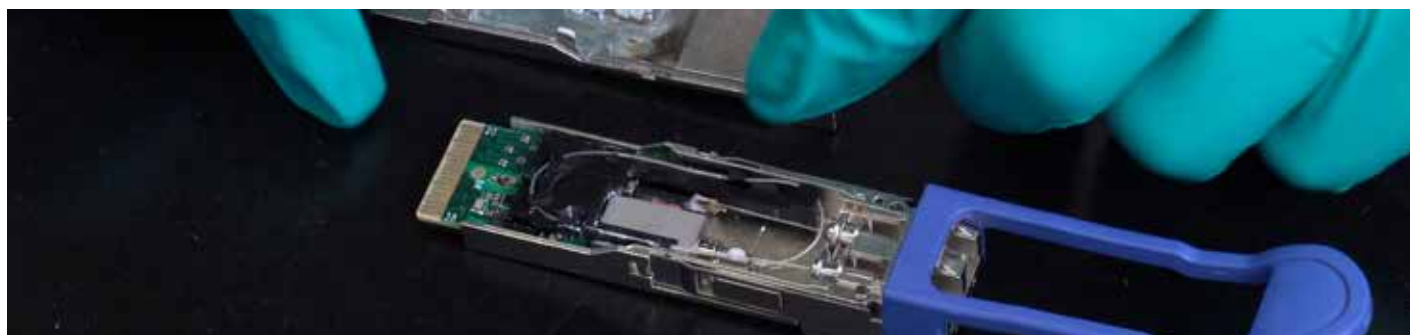
Product		One- or two-part	Color	Thermal conductivity (W/m.K)	Shear adhesion strength
Adhesives	DOWSIL™ TC-2035 Thermally Conductive Adhesive	Two-part (1:1 mix ratio)	Part A: White Part B: Reddish brown	3.3	Al: 381 psi, 2.63 MPa, 263 N/cm <sup>2</sup> Cu: 416 psi, 2.87 MPa, 287 N/cm <sup>2</sup>
	DOWSIL™ SE 4485 Thermally Conductive Adhesive	One-part	White	2.8	Glass-to-glass: 168 psi, 1.2 MPa, 120 N/cm <sup>2</sup>
	DOWSIL™ TC-2030 Thermally Conductive Adhesive	Two-part (1:1 mix ratio)	Gray	2.7	Al: 435 psi, 3 MPa, 300 N/cm <sup>2</sup>
	DOWSIL™ SE 4485 L Thermally Conductive Adhesive	One-part	White	2.2	Glass-to-glass: 262 psi, 1.8 MPa, 180 N/cm <sup>2</sup>
	DOWSIL™ SE 4486 Thermally Conductive Adhesive	One-part	White	1.6	Glass-to-glass: 240 psi, 1.65 MPa, 165 N/cm <sup>2</sup>
	DOWSIL™ EA-9189H Thermally Conductive Adhesive	One-part	White	0.88	Al: 2.2 MPa PC: 1.2 MPa
Encapsulants	DOWSIL™ TC-6015 Thermally Conductive Encapsulant	Two-part (1:1 mix ratio)	Gray	1.6	Al: 0.6 MPa
	DOWSIL™ TC-4605 Encapsulant	Two-part (1:1 mix ratio)	Gray	1	Al: 0.5 MPa

<sup>(1)</sup> Tack-free time refers to the time needed for the product to form into a non-stick surface when coated on polyethylene film.



Curing time / temperature	Viscosity (cP)	Density (g/cm <sup>3</sup> )	Hardness	Notes
30 mins @ 125°C 10 mins @ 150°C	Part A: 130,000 Part B: 118,000 Mixed: 125,000	Uncured: 3.0	95 (Shore A [JIS])	-
Tack-free time <sup>(1)</sup> @ 25°C: 10 mins	Fluidity: 54 mm	Cured: 2.9	45 (Shore D)	UL94 V-0
60 mins @ 130°C	Part A: 250,000 Part B: 200,000 Mixed: 220,000	Uncured: 2.9	92 (Shore A)	-
Tack-free time <sup>(1)</sup> @ 25°C: 8 mins	Fluidity: 47.4 mm	Cured: 2.84	90 (Shore A [JIS])	-
Tack-free time <sup>(1)</sup> @ 25°C: 4 mins	19,600 Fluidity: 60 mm	Cured: 2.6	81 (Shore A [JIS])	-
Tack-free time <sup>(1)</sup> @ 25°C: 2 mins	Non-flow	Cured: 1.68	80 (Shore A)	UL94 V-0
30 mins @ 70°C 4-5 hours @ 25°C	Part A: 4,300 Part B: 3,600 Mixed: 4,000	Cured: 2.25	40 (Shore A)	UL94 V-0 @ 1.5 mm RTI 150°C
60 mins @ 120°C	Part A: 3,100 Part B: 2,500 Mixed: 2,900	Cured: 1.67	30 (Shore A)	UL94 V-0 @ 1.5 mm RTI 150°C

Novel materials from Dow may undergo changes in composition, special characteristics, benefits and other properties. Dow cannot guarantee future product utility. You will need to determine the suitability of the product for your expected use. The product is provided based on the current situation, with no guarantee that the product is defect-free. No explicit or implicit guarantees are provided in any way, including but not limited to guarantees of marketability or fitness for a particular purpose.



# Whether your goal is to produce more power, ensure a more reliable supply or use energy more efficiently, Dow can help.

## Circuit board protection

Product		One- or two-part	Color	Viscosity (cP)	Density (g/cm <sup>3</sup> )
Conformal coatings	DOWSIL™ 1-2577 Low VOC Conformal Coating	One-part	Transparent	1,050	Cured: 1.12
	DOWSIL™ 3-1944 RTV Coating	One-part	Transparent	63,775	Cured: 1.03
	DOWSIL™ 3-1953 Conformal Coating	One-part	Transparent	350	Cured: 0.98
	DOWSIL™ 3-1965 Conformal Coating	One-part	Transparent	115	Cured: 0.99
	DOWSIL™ CC-3122 Conformal Coating	One-part	Transparent	80	Cured: 1.03
	DOWSIL™ CC-8030 UV and Moisture Dual Cure Conformal Coating	One-part	Transparent	520	Cured: 0.98

<sup>(1)</sup> Tack-free time refers to the time needed for the product to form into a non-stick surface when coated on polyethylene film.





Tack-free time <sup>(1)</sup> / temperature	Non-volatile chemical (NVC) content (%)	Hardness	Notes
6 mins @ 25°C 1.5 mins @ 60°C (15% relative humidity)	~33.6	85 (Shore A) 25 (Shore D)	UL94 V-0; MIL I-46058C amended 7; IPC-CC-830B; UL746E
14 mins @ 25°C, 50% RH 0.5 mins @ 60°C, 15% RH	~97%	36 Shore A	UL94 V-0, IPC-CC-830B, UL 746E, Mil I-46058C Amend 7
8 mins @ 25°C 0.5 mins @ 60°C (15% relative humidity)	~99.4	34 (Shore A)	UL94 V-0; MIL I-46058C amended 7; IPC-CC-830B; UL746E
6 mins @ 25°C	~99.5	33 (Shore A)	UL94 V-0; MIL I-46058C amended 7; IPC-CC-830 Amendment 1
Skin over: 6 mins @ 25°C (50% relative humidity)	~90.0	75 (Shore A)	UL94 V-0; Controlled volatility: D4-D10 content <100 ppm
7 secs (300 mW/cm <sup>2</sup> )	~95.0	30 (Shore A)	UV fast curing



## Thermally conductive compounds

Product	One- or two-part	Color	Thermal conductivity (W/m.K)
DOWSIL™ TC-5888 Thermally Conductive Compound	One-part	Gray	5.2
DOWSIL™ TC-5622 Thermally Conductive Compound	One-part	Gray	4.3
DOWSIL™ TC-5021 Thermally Conductive Compound	One-part	Gray	3.3
DOWSIL™ TC-5121C Thermally Conductive Compound	One-part	Greenish yellow	2.8
DOWSIL™ SC 4471 CV Thermally Conductive Compound	One-part	White	2.0
DOWSIL™ TC-5080 Thermally Conductive Compound	One-part	White	1.0

## Bonding and sealing

Product	One- or two-part	Color	Viscosity
DOWSIL™ 3140 RTV Coating	One-part	Translucent	34,000 cP
DOWSIL™ 7091 Adhesive Sealant	One-part	White, gray, black	185 g/min (extrusion rate)



Viscosity (cP)	Density (uncured)	Dielectric strength (kV/mm)	Thermal resistance (cm <sup>2</sup> °C/W)
120,000	2.6	-	0.05
95,000	2.5	-	0.06
82,650	3.47	5.0	0.2
79,000	4.2	1.9	0.09
116,000	2.76	-	-
836,000	2.1	8.7	-

Tack-free time	Curing time / temperature	Hardness	Shear adhesion strength	Notes
116 mins	7 days @ 25°C	31	Al: 1.7 MPa	UL94 V-1
28 mins	7 days @ 25°C	32	Al: 2.0 MPa	UL94 V-1





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